

## AMENDMENTS TO THE CLAIMS

1. (CANCELED).

2. (PREVIOUSLY PRESENTED) A method in a multi-homed endpoint having multiple interfaces with respective Internet Protocol (IP) source addresses, the method including:

first identifying source-destination address pairs available between the IP source addresses of the multi-homed endpoint and IP destination addresses available for reaching a multi-homed peer via an IP network;

initiating, for each source-destination address pair, a metric for identifying successful data transfer between the corresponding IP source address of the multi-homed endpoint and the corresponding IP destination address of the multi-homed peer; and

second identifying one of the source-destination address pairs having the corresponding metric indicating a highest successful data transfer relative to the other source-destination pairs; and

selecting the interface having the IP source address associated with the identified one source-destination address pair, for transport of a message to the multi-homed peer;

wherein the initiating step includes, for each source-destination address pair:

incrementing a corresponding assigned counter in response to a determined absence of an acknowledgement within a prescribed time interval of sending a data frame via the corresponding source-destination address pair; and

decrementing the corresponding assigned counter, until reaching a zero value, for each acknowledgement detected within the corresponding prescribed time interval.

3. (ORIGINAL) The method of claim 2, wherein the second identifying step includes identifying the one source-destination address pair having the corresponding assigned counter with a lowest counter value relative to the other assigned counters.

4. (ORIGINAL) The method of claim 3, wherein the second identifying step further includes selecting, between the one source-destination address pair and a second source-destination address

pair each having the lowest counter value, the one source-destination pair based on having a lower corresponding determined round trip time interval.

5. (ORIGINAL) The method of claim 3, wherein the initiating step includes periodically sending heartbeat data frames on each of unselected ones of the source-destination address pairs, other than the identified one source-destination address pair, having a corresponding nonzero value.

6. (ORIGINAL) The method of claim 5, wherein the initiating step further includes sending the heartbeat data frames, during a detected idle interval, on a selected one of the source-destination address pairs according to a round robin sequence.

7. (ORIGINAL) The method of claim 3, wherein the selecting step includes repeating the selecting step for each message to be output by the multi-homed endpoint to the multi-homed peer.

8. (PREVIOUSLY PRESENTED) The method of claim 2, wherein the selecting step includes repeating the selecting step for each message to be output by the multi-homed endpoint to the multi-homed peer.

9. (CANCELED).

10. (CURRENTLY AMENDED) A computer readable medium having instructions executed to perform selecting a source address based on source-destination address pair metrics, in [[in,]] a multi-homed endpoint comprising:

a plurality of network interfaces having respective Internet Protocol (IP) source addresses, each network interface configured for establishing a connection with a multi-homed peer endpoint via an IP network for transmission of data from the multi-homed endpoint to the multi-homed peer endpoint via the IP network;

first executable instructions configured for identifying source-destination address pairs

available between the IP source addresses and IP destination addresses available for reaching the multi-homed peer endpoint via the IP network, the first executable ~~resource~~ instructions configured for initiating, for each source-destination address pair, a metric for identifying successful data transfer between the corresponding IP source address of the multi-homed endpoint and the corresponding IP destination address of the multi-homed peer endpoint; and

selection instructions configured for identifying one of the source-destination address pairs having the corresponding metric indicating a highest successful data transfer relative to the other source-destination pairs, the selection ~~resource~~ instructions configured for selecting the network interface having the IP source ~~destination~~ address associated with the identified one source-destination address pair, for transmission of a message to the multi-homed peer endpoint via the selected network interface;

wherein the first executable instructions are configured for initiating a counter for each source-destination address pair, the first ~~resource~~ executable instructions configured for:

incrementing the counter for a corresponding source-destination address pair in response to a determined absence of an acknowledgement within a prescribed time interval of sending a data frame via the corresponding source-destination address pair; and

decrementing the counter for a corresponding source-destination address pair, until reaching a zero value, in response to each acknowledgement detected within the corresponding prescribed time interval.

11. (CURRENTLY AMENDED) The endpoint of claim 10, wherein the selection ~~resource~~ is instructions are configured for selecting the one source-destination address pair having the corresponding counter with a lowest counter value relative to the other counters.

12. (CURRENTLY AMENDED) The endpoint of claim 11, wherein the selection ~~resource~~ is instructions are configured for selecting, between the one source-destination address pair and a second source-destination address pair each having the lowest counter value, the one source-destination pair based on having a lower corresponding determined round trip time interval.

13. (CURRENTLY AMENDED) The endpoint of claim 11, wherein the first executable ~~resource is~~ instructions are configured for periodically sending heartbeat data frames on each of unselected ones of the source-destination address pairs, other than the identified one source-destination address pair, having a corresponding nonzero value.

14. (CURRENTLY AMENDED) The endpoint of claim 13, wherein the first executable ~~resource is~~ instructions are further configured for sending second heartbeat data frames, during a detected idle interval, on a selected one of the source-destination address pairs according to a round robin sequence.

15. (CURRENTLY AMENDED) The endpoint of claim 11, wherein the selecting ~~resource is~~ instructions are configured for selecting a new network interface, based on identifying the corresponding source-destination address pair having the corresponding metric indicating the highest successful data transfer relative to the other source-destination pairs, for each message to be output by the multi-homed endpoint to the multi-homed peer endpoint.

16. (CURRENTLY AMENDED) The method of claim 10, wherein the selecting ~~resource is~~ instructions are configured for selecting a new network interface, based on identifying the corresponding source-destination address pair having the corresponding metric indicating the highest successful data transfer relative to the other source-destination pairs, for each message to be output by the multi-homed endpoint to the multi-homed peer endpoint.

17. (CANCELED).

18. (PREVIOUSLY PRESENTED) A computer readable medium having stored thereon sequences of instructions for sending a message by a multi-homed endpoint having multiple interfaces with respective Internet Protocol (IP) source addresses, the sequences of instructions including instructions for:

first identifying source-destination address pairs available between the IP source addresses of the multi-homed endpoint and IP destination addresses available for reaching a multi-homed peer via an IP network;

initiating, for each source-destination address pair, a metric for identifying successful data transfer between the corresponding IP source address of the multi-homed endpoint and the corresponding IP destination address of the multi-homed peer; and

second identifying one of the source-destination address pairs having the corresponding metric indicating a highest successful data transfer relative to the other source-destination pairs; and

selecting the interface having the IP source address associated with the identified one source-destination address pair, for transport of a message to the multi-homed peer;

wherein the initiating step includes, for each source-destination address pair:

incrementing a corresponding assigned counter in response to a determined absence of an acknowledgement within a prescribed time interval of sending a data frame via the corresponding source-destination address pair; and

decrementing the corresponding assigned counter, until reaching a zero value, for each acknowledgement detected within the corresponding prescribed time interval.

19. (ORIGINAL) The medium of claim 18, wherein the second identifying step includes identifying the one source-destination address pair having the corresponding assigned counter with a lowest counter value relative to the other assigned counters.

20. (ORIGINAL) The medium of claim 19, wherein the second identifying step further includes selecting, between the one source-destination address pair and a second source-destination address pair each having the lowest counter value, the one source-destination pair based on having a lower corresponding determined round trip time interval.

21. (ORIGINAL) The medium of claim 19, wherein the initiating step includes periodically sending heartbeat data frames on each of unselected ones of the source-destination address pairs,

other than the identified one source-destination address pair, having a corresponding nonzero value.

22. (ORIGINAL) The medium of claim 21, wherein the initiating step further includes sending the heartbeat data frames, during a detected idle interval, on a selected one of the source-destination address pairs according to a round robin sequence.

23. (ORIGINAL) The medium of claim 19, wherein the selecting step includes repeating the selecting step for each message to be output by the multi-homed endpoint to the multi-homed peer.

24. (PREVIOUSLY PRESENTED) The medium of claim 18, wherein the selecting step includes repeating the selecting step for each message to be output by the multi-homed endpoint to the multi-homed peer.

25. (CANCELED).

26. (CURRENTLY AMENDED) A computer readable medium having instructions executed to perform selecting a source address based on source-destination address pair metrics, in [[in,]] a multi-homed endpoint comprising:

multiple network interfaces with respective Internet Protocol (IP) source addresses, each network interface configured for establishing a connection with a multi-homed peer endpoint via an IP network for transmission of data from the multi-homed endpoint to the multi-homed peer endpoint via the IP network;

first means for identifying source-destination address pairs available between the IP source addresses of the multi-homed endpoint and IP destination addresses available for reaching the multi-homed peer endpoint via an IP network;

means for initiating, for each source-destination address pair, a metric for identifying successful data transfer between the corresponding IP source address of the multi-homed endpoint and the corresponding IP destination address of the multi-homed peer endpoint; and

second means for identifying one of the source-destination address pairs having the corresponding metric indicating a highest successful data transfer relative to the other source-destination pairs; and

means for selecting the network interface having the IP source address associated with the identified one source-destination address pair, for transmission of a message to the multi-homed peer endpoint via the selected network interface;

wherein the initiating means is configured, for each source-destination address pair, for:

incrementing a corresponding assigned counter in response to a determined absence of an acknowledgement within a prescribed time interval of sending a data frame via the corresponding source-destination address pair; and

decrementing the corresponding assigned counter, until reaching a zero value, for each acknowledgement detected within the corresponding prescribed time interval.

27. (ORIGINAL) The endpoint of claim 26, wherein the second means for identifying is configured for identifying the one source-destination address pair having the corresponding assigned counter with a lowest counter value relative to the other assigned counters.

28. (ORIGINAL) The endpoint of claim 27, wherein the second means for identifying further is configured for selecting, between the one source-destination address pair and a second source-destination address pair each having the lowest counter value, the one source-destination pair based on having a lower corresponding determined round trip time interval.

29. (ORIGINAL) The endpoint of claim 27, wherein the initiating means is configured for periodically sending heartbeat data frames on each of unselected ones of the source-destination address pairs, other than the identified one source-destination address pair, having a corresponding nonzero value.

30. (ORIGINAL) The endpoint of claim 29, wherein the initiating means is configured for

sending second heartbeat data frames, during a detected idle interval, on a selected one of the source-destination address pairs according to a round robin sequence.

31. (PREVIOUSLY PRESENTED) The endpoint of claim 27, wherein the selecting means is configured for repeating the selection of a source IP address for each message to be output by the multi-homed endpoint to the multi-homed peer endpoint.

32. (PREVIOUSLY PRESENTED) The endpoint of claim 26, wherein the selecting means is configured for repeating the selection of a source IP address for each message to be output by the multi-homed endpoint to the multi-homed peer endpoint.